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FILE 'REGISTRY' ENTERED AT 10:22:57 ON 24 SEP 2008
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STRUCTURE FILE UPDATES: 22 SEP 2008 HIGHEST RN 1051655-89-0
DICTIONARY FILE UPDATES: 22 SEP 2008 HIGHEST RN 1051655-89-0

New CAS Information Use Policies, enter HELP USAGETERMS for details.

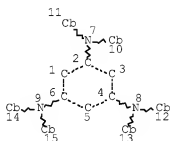
TSCA INFORMATION NOW CURRENT THROUGH July 5, 2008.

Please note that search-term pricing does apply when
conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and
predicted properties as well as tags indicating availability of
experimental property data in the original document. For information
on property searching in REGISTRY, refer to:

<http://www.cas.org/support/stngen/stdoc/properties.html>

=> d que stat 135
L13 STR

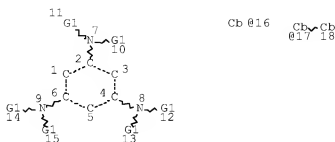


NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
GGCAT IS UNS AT 10
GGCAT IS UNS AT 11
GGCAT IS UNS AT 12
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GGCAT IS UNS AT 14
GGCAT IS UNS AT 15
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 15

STEREO ATTRIBUTES: NONE
L14 375 SEA FILE=REGISTRY SSS FUL L13
L22 6 SEA FILE=REGISTRY ABB=ON PLU=ON (104216-55-9/BI OR
138143-23-4/BI OR 147-14-8/BI OR 185690-41-9/BI OR

2085-33-8/BI OR 852641-11-3/BI)
 L23 2 SEA FILE=REGISTRY ABB=ON PLU=ON L22 AND L14
 L30 STR



VAR G1=16/17
 NODE ATTRIBUTES:
 CONNECT IS E1 RC AT 16
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 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
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 NUMBER OF NODES IS 18

STEREO ATTRIBUTES: NONE
 L32 SCR 1918
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(FILE 'HOME' ENTERED AT 08:57:51 ON 24 SEP 2008)

FILE 'HCAPLUS' ENTERED AT 08:58:10 ON 24 SEP 2008
 ACT GAR054AN/A

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 L2 STR
 L3 (375)SEA FILE=REGISTRY SSS FUL L2
 L4 STR
 L5 (185)SEA FILE=REGISTRY SUB=L3 SSS FUL L4
 L6 (180)SEA FILE=REGISTRY ABB=ON PLU=ON L5 NOT M/ELS
 L7 (164)SEA FILE=REGISTRY ABB=ON PLU=ON L6 AND NC=1
 L8 (2)SEA FILE=REGISTRY ABB=ON PLU=ON L1 AND L7
 L9 (148)SEA FILE=HCAPLUS ABB=ON PLU=ON L7
 L10 (20)SEA FILE=HCAPLUS ABB=ON PLU=ON L8
 L11 128 SEA FILE=HCAPLUS ABB=ON PLU=ON L9 NOT L10

 L12 115 S L11 AND (PY<=2005 OR PRY<=2005 OR AY<=2005)

FILE 'REGISTRY' ENTERED AT 09:01:45 ON 24 SEP 2008
 ACT GAR052/A

 L13 STR

L14 375 SEA FILE=REGISTRY SSS FUL L13

ACT GAR052S1/A

L15 STR
L16 (375)SEA FILE=REGISTRY SSS FUL L15
L17 STR
L18 185 SEA FILE=REGISTRY SUB=L16 SSS FUL L17

L19 84 S L18 AND NR=7
L20 55 S L19 NOT O/ELS

FILE 'HCAPLUS' ENTERED AT 09:30:17 ON 24 SEP 2008
E US20070066848/PN
L21 1 S E3
SEL RN

FILE 'REGISTRY' ENTERED AT 09:30:55 ON 24 SEP 2008
L22 6 S E1-6
L23 2 S L22 AND L14
L24 54 S L20 NOT L23

FILE 'HCAPLUS' ENTERED AT 09:31:26 ON 24 SEP 2008
L25 66 S L24
L26 64 S L25 AND (PY<=2005 OR PRY<=2005 OR AY<=2005)
L27 20 S L23
L28 55 S L26 NOT L27

FILE 'REGISTRY' ENTERED AT 09:32:50 ON 24 SEP 2008
L29 54 S L24 NOT L23
L30 STR L15
L31 1 S L30 SSS SAM SUB=L14
L32 SCR 1918
L33 0 S L30 NOT L32 SSS SAM SUB=L14
L34 24 S L30 NOT L32 SSS FUL SUB=L14
L35 24 S L34 NOT L23

FILE 'HCAPLUS' ENTERED AT 10:21:19 ON 24 SEP 2008
L36 37 S L35
L37 35 S L36 AND (PY<=2005 OR PRY<=2005 OR AY<=2005)
L38 2 S L36 NOT L37

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FILE 'HCAPLUS' ENTERED AT 10:23:05 ON 24 SEP 2008
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FILE COVERS 1907 - 24 Sep 2008 VOL 149 ISS 13
 FILE LAST UPDATED: 23 Sep 2008 (20080923/ED)

HCAPLUS now includes complete International Patent Classification (IPC) reclassification data for the second quarter of 2008.

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d ibib abs hitstr hitind 137 1-35

L37 ANSWER 1 OF 35 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2007:383974 HCAPLUS Full-text
 DOCUMENT NUMBER: 146:411684
 TITLE: Organic electroluminescent panel and its manufacture method
 INVENTOR(S): Suzuki, Harumi; Katayama, Masayuki; Kato, Hiromichi; Kato, Tetsuya
 PATENT ASSIGNEE(S): Denso Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 17pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2007088430	A	20070405	JP 2006-206169	20060728
KR 2007024409	A	20070302	KR 2006-80824	20060825
KR 744282	B1	20070730		
PRIORITY APPLN. INFO.:			JP 2005-245518	A 20050826
			JP 2006-206169	A 20060728

OTHER SOURCE(S): MARPAT 146:411684

AB The title panel comprises sequential layers of a substrate, an anode, a planarized layer (A), a hole-transporting material layer (B), organic electroluminescent layers, and a cathode, wherein layer (B) has a thickness of ≥ 8 nm, and a Tg higher than that of layer (A). The occurrence of leak current can be avoided when the panel is driven at high temps.

IT 863012-94-6 933054-23-0 933054-24-1

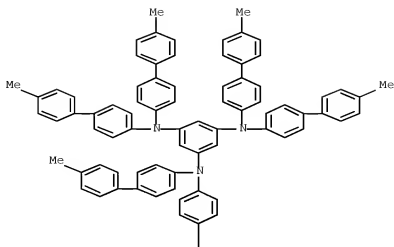
RL: TEM (Technical or engineered material use); USES (Uses)
 (hole-transporting materials for organic electroluminescent panels with reduced leak current at high temps.)

RN 863012-94-6 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis(4'-methyl[1,1'-

biphenyl]-4-yl)- (CA INDEX NAME)

PAGE 1-A

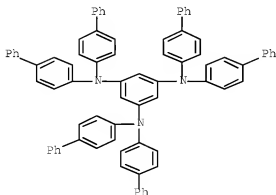


PAGE 2-A



RN 933054-23-0 HCAPLUS

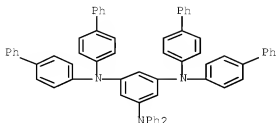
CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis([1,1'-biphenyl]-4-yl)- (CA INDEX NAME)



RN 933054-24-1 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3-tetrakis([1,1'-biphenyl]-4-yl)- (CA INDEX NAME)

N5,N5-diphenyl- (CA INDEX NAME)



CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)
Section cross-reference(s): 73
IT 863012-94-6 933054-23-0 933054-24-1
933054-25-2
RL: TEM (Technical or engineered material use); USES (Uses)
(hole-transporting materials for organic electroluminescent panels
with reduced leak current at high temps.)

L37 ANSWER 2 OF 35 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2006:193629 HCAPLUS Full-text

DOCUMENT NUMBER: 144:283342

TITLE: Method of manufacturing electron device and
organic electroluminescent display and ink for
organic amorphous film

INVENTOR(S): Yasukawa, Akiko; Uchino, Shoichi; Arai,
Yoshihiro; Tanaka, Masahiro; Ito, Masato;
Yaguchi, Tomio

PATENT ASSIGNEE(S): Japan

SOURCE: U.S. Pat. Appl. Publ., 17 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

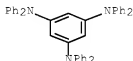
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US 20060045959	A1	20060302	US 2005-207838	200508 22
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JP 2006066294	A	20060309	JP 2004-249050	200408 27
			<--	
CN 1741693	A	20060301	CN 2005-10093547	200508 29
			<--	
PRIORITY APPLN. INFO.:			JP 2004-249050	A 200408 27
			<--	

AB The present invention provides a method which can form a uniform amorphous film using an organic low mol. weight material which is refined by distillation or sublimation. The viscosity of ink is regulated by mixing two kinds of solvents so as to increase a surface tension of the ink and the solubility of the organic material in a drying step whereby an amorphous film made of an organic material is selectively formed in a recessed region defined by a partition wall layer using an ink jet method.

IT 126717-23-5
 RL: DEV (Device component use); USES (Uses)
 (Method of manufacturing electron device and organic electroluminescent display and ink for organic amorphous film)

RN 126717-23-5 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX NAME)



INCL 427066000; 252301160

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT 126717-23-5 693794-98-8
 RL: DEV (Device component use); USES (Uses)
 (Method of manufacturing electron device and organic electroluminescent display and ink for organic amorphous film)

L37 ANSWER 3 OF 35 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2006:152776 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 144:222301

TITLE: Multilayered structures for light-emitting devices

INVENTOR(S): He, Gufeng; Pfeiffer, Martin; Blochwitz-Nimoth, Jan

PATENT ASSIGNEE(S): Novalis GmbH, Germany; Technische Universitaet Dresden

SOURCE: PCT Int. Appl., 51 pp.
 CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006015567	A1	20060216	WO 2005-DE1076	20050616

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UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
 RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU,
 IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF,
 BJ, CF, CG, CI, CM, GA, GN, GO, GW, ML, MR, NE, SN, TD, TG,
 BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW,
 AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
 EP 1789994 A1 20070530 EP 2005-766723

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R: GB, NL
 JP 2008509565 T 20080327 JP 2007-525155

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TW 285441 B 20070811 TW 2005-94123656

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KR 2007056061 A 20070531 KR 2007-703457

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US 20080203406 A1 20080828 US 2007-573617

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PRIORITY APPLN. INFO.: DE 2004-102004039594A

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EP 2004-19276 A

200408
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WO 2005-DE1076 W

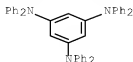
200506
16

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AB Multilayered structures for light-emitting devices, especially phosphorescent
 organic light-emitting diodes, comprising a hole-injecting contact and an
 electron-injecting contact, each linked with a light-emitting region are
 described in which the light-emitting region comprises heterojunction formed
 from a light-emitting layer comprising an ambipolar (and preferably hole-
 transporting) material (M1) and another light-emitting layer comprising
 another ambipolar (and preferably electron-transporting) material (M2) between
 which a staggered type II interface is formed; M1 and M2 incorporate ≥ 1
 triplet-emitting dopants and the energy barriers to hole transfer from M1 to
 M2 and to electron transfer from M2 to M1 are each ≥ 0.4 eV. Devices
 possessing the structures are also described.

IT 126717-23-5, 1,3,5-Tris(diphenylamino)benzene
 RL: DEV (Device component use)
 (multilayered structures for light-emitting devices)

RN 126717-23-5 HCAPLUS
 CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX
 NAME)



IC ICM H01L051-50
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 76
 IT 81-84-5, 1H,3H-Naphtho[1,8-cd]pyran-1,3-dione 91-19-0, Quinoxaline 91-22-5, Quinoline, uses 110-02-1D, Thiophene, derivs. 273-13-2D, 2,1,3-Benzothiadiazole, derivs. 288-88-0, 1H-1,2,4-Triazole 542-92-7D, Cyclopentadiene, derivs. 629-20-9D, Cyclooctatetraene, derivs. 1662-01-7, Bathophenanthroline 2085-33-8, Tris(8-hydroxyquinolinato)aluminum 2382-08-3 11120-54-0D, Oxadiazole, derivs. 23749-58-8 36118-45-3D, Pyrazoline, derivs. 37275-48-2, Bipyridine 38332-84-2, Poly(p-perfluorophenylene) 65181-78-4, TPD 87433-10-1 105389-36-4, 4,4',4'''-Tris(N,N-diphenylamino)triphenylamine 122738-21-0 124729-98-2, m-MTDATA 126717-23-5, 1,3,5-Tris(diphenylamino)benzene 139092-78-7, 4,4',4'''-Tris(N-carbazolyl)triphenylamine 139255-17-7 146162-54-1, BALq 185690-39-5, 4,4',4'''-Tris(N(1-naphthyl)-N-phenylamino)triphenylamine 189363-47-1 192198-85-9, TPBI 350042-00-1

RL: DEV (Device component use)

(multilayered structures for light-emitting devices)

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 4 OF 35 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2006:10788 HCAPLUS Full-text
 DOCUMENT NUMBER: 144:117899
 TITLE: Top-emitting organic electroluminescent devices showing resistance to water and oxygen
 INVENTOR(S): Kimura, Hiroshi
 PATENT ASSIGNEE(S): Fuji Electric Holding Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2006004721	A	20060105	JP 2004-178792	20040616

PRIORITY APPLN. INFO.: <-- JP 2004-178792 20040616

AB The device comprises a substrate, a reflection electrode, an organic electroluminescent layer, a transparent electrode, and a trapping agent layer,

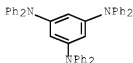
with the trapping layer containing ≥ 1 compd(s). contained in the layers forming the device. The trapping layer may be formed by vapor deposition. Also claimed are the said devices including ≥ 1 trapping agents selected from anthracene, coronene, perylene, rubrene, C6H5XZ (X = C6H4, etc.; Z = Ph, naphthyl, etc), certain complexes of Al, Be, Zn, Mg, Ga, etc., oxadiazoles, triazoles, thiophenes, etc. The organic electroluminescent layers can be protected from water and O.

IT 126717-23-5, p-DPA-TDAB

RL: DEV (Device component use); MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(p-DPA-TDAB, oxygen- and water-trapping agent; top-emitting organic electroluminescent devices equipped with water- and oxygen-trapping layers)

RN 126717-23-5 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX NAME)



CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT 126717-23-5, p-DPA-TDAB

RL: DEV (Device component use); MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(p-DPA-TDAB, oxygen- and water-trapping agent; top-emitting organic electroluminescent devices equipped with water- and oxygen-trapping layers)

L37 ANSWER 5 OF 35 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2005:902553 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 143:238366

TITLE: Organic electroluminescent device

INVENTOR(S): Kato, Tetsuya; Kojima, Kazushige

PATENT ASSIGNEE(S): Denso Corporation, Japan

SOURCE: U.S. Pat. Appl. Publ., 22 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20050184657	A1	20050825	US 2005-61449	20050222
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US 7374830	B2	20080520		
JP 2005276802	A	20051006	JP 2004-302986	20041018
			<--	

KR 2006043123

A

20060515

KR 2005-14874

200502
23

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PRIORITY APPLN. INFO.:

JP 2004-49462

A

200402
25

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JP 2004-302986

A

200410
18

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OTHER SOURCE(S): MARPAT 143:238366

AB An organic EL device includes a pair of electrodes, a light emitter layer obtained by mixing a hole transporting material made of a tertiary amine compound, an electron transporting material and a light emitting additive. The tertiary amine compound constituting the hole transporting material has only one oxidation potential as measured by the cyclic voltammetry. A difference in ionization potential between the hole transporting material and electron transporting material of the light emitter layer is 0.35 eV or greater.

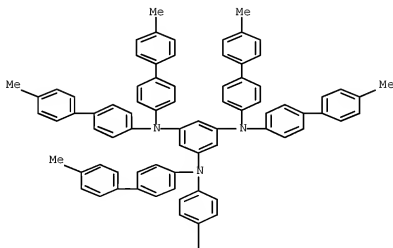
IT 863012-94-6P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(organic electroluminescent device)

RN 863012-94-6 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis(4'-methyl[1,1'-biphenyl]-4-yl)- (CA INDEX NAME)

PAGE 1-A



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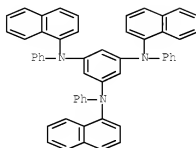
IC ICM H01J001-62
 INCL 313504000
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 74
 IT 147951-36-8P 697234-81-4P 852641-11-3P **863012-94-6P**
 RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (organic electroluminescent device)

L37 ANSWER 6 OF 35 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2005:606195 HCAPLUS [Full-text](#)
 DOCUMENT NUMBER: 143:142829
 TITLE: High-density optical recording materials particularly sensitive to blue laser lights
 INVENTOR(S): Ishida, Tsutomu; Miyazato, Masataka; Shiozaki, Hiroyuki; Ogiso, Akira
 PATENT ASSIGNEE(S): Mitsui Chemicals Inc., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 41 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005186429	A	20050714	JP 2003-430279	20031225

PRIORITY APPLN. INFO.: JP 2003-430279
 20031225

OTHER SOURCE(S): MARPAT 143:142829
 AB The material has ≥ 1 recording layer containing ≥ 1 trisdiarylamine derivative
 The trisdiarylamine derivs. may be Ar(NAr1Ar2)(NAr3Ar4)NAr5Ar6 [Ar1-6 = (un)substituted monovalent aromatic group, substituent = halo, nitro, OH, alkyl, aryl, alkylthio, metallocenyl, etc.; Ar = (un)substituted trivalent aromatic group, substituent = same as above]. The material shows improved recording and reading-out by laser beams at wavelength 300-900 nm.
 IT 250267-08-4
 RL: TEM (Technical or engineered material use); USES (Uses)
 (trisdiarylamine organic dyes for high-d. optical recording materials sensitive to blue laser lights)
 RN 250267-08-4 HCAPLUS
 CN 1,3,5-Benzenetriamine, N1,N3,N5-tri-1-naphthalenyl-N1,N3,N5-triphenyl- (CA INDEX NAME)



IC ICM B41M005-26
 ICS C09B057-00; G11B007-24
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)
 IT 250267-08-4 515834-40-9 604784-26-1 857842-25-2
 857842-27-4 858280-41-8 858280-42-9 858280-43-0 858280-44-1
 858280-45-2
 RL: TEM (Technical or engineered material use); USES (Uses)
 (trisdiarylamine organic dyes for high-d. optical recording
 materials sensitive to blue laser lights)

L37 ANSWER 7 OF 35 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2005:295951 HCAPLUS Full-text
 DOCUMENT NUMBER: 142:491862
 TITLE: Composite cavity transport material
 INVENTOR(S): Xu, Wei; Hua, Zhongyi
 PATENT ASSIGNEE(S): Fudan University, Peop. Rep. China
 SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 30
 PP.
 CODEN: CNXXEV
 DOCUMENT TYPE: Patent
 LANGUAGE: Chinese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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CN 1458141	A	20031126	CN 2002-111700	200205 16
			<--	
PRIORITY APPLN. INFO.:			CN 2002-111700	200205 16

AB The cavity transport material is composed of 2-4 kinds of aromatic triamine homologs. The aromatic triamine is prepared by N-alkylating 1,3,5-tri(arylamino)benzene with aromatic iodide in solvent (decalin, dodecane, decane, or di-Ph ether) in the presence of Cu powder/KOH at 120-200° for 2-12 h then with another aromatic halide for 8-48 h under bubbling N₂ or inert gas, filtering, washing with MeOH, decolorizing with activated C, and purifying via recrystn. or column chromatog. The cavity transport material may be used to manufacture electroluminescent device that consists of an anode of transparent

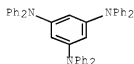
conductive film, a cavity transport layer of the cavity transport material, a luminescent layer of organometallic complex (organic mol., or polymer), an electrode transport layer of organic mol. or organic complex, and a metal cathode.

IT 126717-23-5 250267-08-4 850447-62-0
850447-63-1 850447-83-5 850447-84-6
850447-85-7 850447-86-8

RL: TEM (Technical or engineered material use); USES (Uses)
(composite cavity transport material for manufacture of
electroluminescent device)

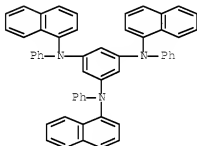
RN 126717-23-5 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX
NAME)



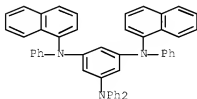
RN 250267-08-4 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tri-1-naphthalenyl-N1,N3,N5-
triphenyl- (CA INDEX NAME)



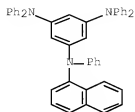
RN 850447-62-0 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3-di-1-naphthalenyl-N1,N3,N5,N5-
tetraphenyl- (CA INDEX NAME)



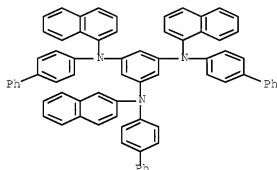
RN 850447-63-1 HCAPLUS

CN 1,3,5-Benzenetriamine, N1-1-naphthalenyl-N1,N3,N3,N5,N5-pentaphenyl-
(CA INDEX NAME)



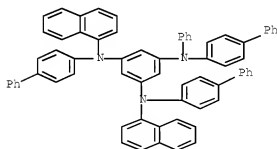
RN 850447-83-5 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris([1,1'-biphenyl]-4-yl)-N1,N3-di-1-naphthalenyl-N5-2-naphthalenyl- (CA INDEX NAME)



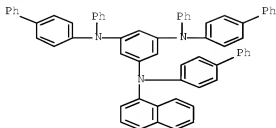
RN 850447-84-6 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris([1,1'-biphenyl]-4-yl)-N1,N3-di-1-naphthalenyl-N5-phenyl- (CA INDEX NAME)

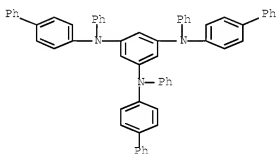


RN 850447-85-7 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris([1,1'-biphenyl]-4-yl)-N1-1-naphthalenyl-N3,N5-diphenyl- (CA INDEX NAME)



RN 850447-86-8 HCAPLUS
 CN 1,3,5-Benzenetriamine, N1,N3,N5-tris([1,1'-biphenyl]-4-yl)-N1,N3,N5-triphenyl- (CA INDEX NAME)



IC ICM C07C211-54
 ICS C09K011-06; H01L033-00
 CC 76-1 (Electric Phenomena)
 IT 126717-23-5 126717-25-7 134257-64-0 138143-23-4
 184895-05-4 189764-94-1 250267-08-4 393586-98-6
 604784-30-7 850447-62-0 850447-63-1
 850447-64-2 850447-65-3 850447-66-4 850447-67-5 850447-68-6
 850447-69-7 850447-70-0 850447-71-1 850447-72-2 850447-73-3
 850447-74-4 850447-75-5 850447-76-6 850447-77-7 850447-78-8
 850447-79-9 850447-80-2 850447-81-3 850447-82-4
 850447-83-5 850447-84-6 850447-85-7
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 850448-10-1 850448-11-2 850448-12-3 850448-13-4 850448-14-5
 850448-15-6 850448-16-7 850448-17-8 850448-18-9 850448-19-0
 850448-20-3 850448-21-4

RL: TEM (Technical or engineered material use); USES (Uses)
 (composite cavity transport material for manufacture of
 electroluminescent device)

L37 ANSWER 8 OF 35 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2004:957380 HCAPLUS Full-text
 DOCUMENT NUMBER: 141:396986
 TITLE: Organic colorants with metallic gloss and
 film-forming materials containing them with
 excellent dispersion stability
 Ogura, Katsuyuki; Kurata, Ryuichiro; Kano,
 INVENTOR(S):

PATENT ASSIGNEE(S): Fumihisa
 SOURCE: Chiba University, Japan; Toyo Ink Mfg. Co., Ltd.
 Jpn. Kokai Tokkyo Koho, 23 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

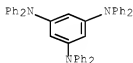
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004315545	A	20041111	JP 2003-55065	20030303
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PRIORITY APPLN. INFO.:			JP 2003-52095	A 20030228
<--				

AB The colorants, useful for writing and printing inks and coatings, are depicted as A_nNRXC(CN):C(CN)2_n [A = (un)substituted aromatic, heterocyclic, condensed, or spirocyclic ring residue, (un)substituted biphenyl, fluorene, or triphenylamine-based dendrimer residue; X = (un)substituted aromatic or heterocyclic ring residue; R = (un)substituted aromatic group, heterocyclic group, alkyl, alkenyl, or cycloalkyl; n ≥ 2]. Thus, an ink containing N,N'-bis(4-tricyanoethenylphenyl)-N,N'-diphenylbenzidine (prepared from N,N,N',N'-tetraphenylbenzidine and tetracyanoethylene), a rosin-modified phenolic resin, and a petroleum-type solvent showed good gloss and adhesion to paper and metal.

IT 126717-23-5, 1,3,5-Tris(diphenylamino)benzene
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (for colorant preparation; organic colorants with metallic gloss for inks and coatings with good storage stability)

RN 126717-23-5 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX NAME)



IC ICM C09B023-00
 ICS C08L005-00; C08L101-00; C09D007-12; C09D201-00

CC 42-12 (Coatings, Inks, and Related Products)
 Section cross-reference(s): 25, 41

IT 100-61-8, N-Methylaniline, reactions 122-39-4, Diphenylamine, reactions 626-39-1, 1,3,5-Tribromobenzene 670-54-2, Tetracyanoethylene, reactions 15546-43-7, N,N,N',N'-Tetraphenylbenzidine 105389-36-4 113933-91-8, 2,7-Bis(diphenylamino)fluorene 126717-23-5, 1,3,5-Tris(diphenylamino)benzene 128055-74-3, 2,2',7,7'-Tetrabromo-9,9'-spirofluorene 790256-26-7, 9-(Dicyanomethylene)-2,7-bis(diphenylamino)fluorene 790256-33-6, 2,2-Bis[4-(diphenylamino)phenyl]propane

RL: RCT (Reactant); RACT (Reactant or reagent)
 (for colorant preparation; organic colorants with metallic gloss for inks
 and coatings with good storage stability)

L37 ANSWER 9 OF 35 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2004:801715 HCAPLUS Full-text
 DOCUMENT NUMBER: 141:304040
 TITLE: Organic EL device with high emission efficiency
 and long service life, its manufacture, and
 organic EL panel assembled with same
 INVENTOR(S): Koshiishi, Akira; Nada, Naoshi; Tomioka, Satoshi
 PATENT ASSIGNEE(S): Sony Corp., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

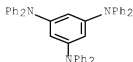
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2004273163	A	20040930	JP 2003-59013	20030305
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PRIORITY APPLN. INFO.:			JP 2003-59013	20030305
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AB The organic EL device consists of ≥ 1 layers of organic layers involving light-emitting layers (LEL) between a pair of electrode layers, ≥ 1 of which are transparent electrodes, wherein an electron transfer-controlling layer (ETCL) which restricts the flow of electrons to LEL, preferably comprising α -NPD, TPD, m-TPD, 1-TNATA, p-PMTDATA, TFATA, TCATA, p-DPA-TDAB, MTDAPB, p-BPD, PFFA or FPD, is provided between the electrode layers, hence only electrons which contribute to light emission are injected to LEL from ETCL, thereby improving emission efficiency, suppressing elec. power consumption, and achieving long service life. Preferably, an electron-transporting layer (ETL) is formed between the electrode layer as a cathode and LEL, ETCL is formed between the ETL and the LEL, and the energy level of LUMO of ETCL is lower than that of ETL. The organic EL panel contains a plurality of the organic EL devices arranged on a substrate.

IT 126717-23-5, 1,3,5-Tris(diphenylamino)benzene
 RL: DEV (Device component use); USES (Uses)
 (p-DPA-TDAB, electron transfer-controlling layer; manufacture of organic EL device with high emission efficiency for organic EL panel)

RN 126717-23-5 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX NAME)



IC ICM H05B033-22
 ICS H05B033-10; H05B033-14
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 IT 126717-23-5, 1,3,5-Tris(diphenylamino)benzene
 RL: DEV (Device component use); USES (Uses)
 (p-DPA-TDAB, electron transfer-controlling layer; manufacture of organic EL device with high emission efficiency for organic EL panel)

L37 ANSWER 10 OF 35 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:799548 HCAPLUS Full-text

DOCUMENT NUMBER: 141:295722

TITLE: Process for preparation of novel
 1,3,5-tris(arylamino)benzene derivatives
 INVENTOR(S): Inada, Hiroshi; Akashi, Nobutaka; Hayashi,
 Tomoko

PATENT ASSIGNEE(S): Bando Chemical Industries, Ltd., Japan

SOURCE: PCT Int. Appl., 24 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2004083161	A1	20040930	WO 2004-JP3512	20040315
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W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
JP 2004277385	A	20041007	JP 2003-74646	20030318
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CN 1761643	A	20060419	CN 2004-80007367	20040315
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US 20060173216	A1	20060803	US 2005-549166	20050914
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US 7271291	B2	20070918		
KR 757289	B1	20070911	KR 2005-717266	20050915
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PRIORITY APPLN. INFO.:

JP 2003-74646

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200303
18

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WO 2004-JP3512

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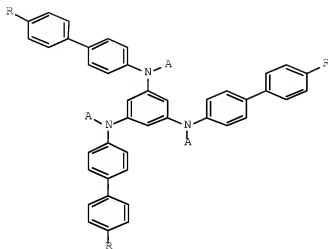
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OTHER SOURCE(S):

MARPAT 141:295722

GI



I

AB This invention pertains to a method for producing 1,3,5-tris(arylamino)benzene derivs. with general formula I [wherein A = naphthyl, anthryl, or phenanthryl; R = H or diarylamino], which comprises reacting 1,3,5-benzenetriol with an aromatic amine in the presence of I2, followed by the addition of aryl iodide, K2CO3, Cu powder, and 18-crown-6. For example, 1,3,5-benzenetriol was reacted with 1-naphthylamine in the presence of I2 to give 1,3,5-tris(1-naphthylamino)benzene (25%). The above compound was reacted with 4-iodobiphenyl in mesitylene in the presence of K2CO3, Cu powder, and 18-crown-6 to afford 1,3,5-tris[N-(4-biphenyl)-N-(1-naphthyl)amino]benzene (32%) (Tg = 130 °C; Tc = 204 °C; Tm = 271 °C). I have an oxidation potential of about 0.5 to 0.6 V, excelling in reversibility in the oxidation reduction process, and exhibit a high glass transition temperature, excelling in heat resistance. Thus, a highly practicable organic semiconductor film can be easily fabricated from the compound by coating or vacuum deposition technique.

IT 765279-08-1P 765279-09-2P

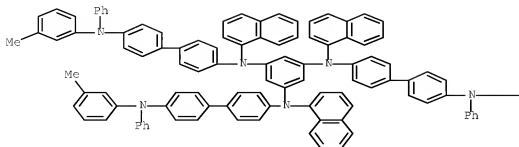
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)

(preparation of novel tris(arylamino)benzene derivs.)

RN 765279-08-1 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris[4'-[(3-methylphenyl)phenylamino][1,1'-biphenyl]-4-yl]-N1,N3,N5-tri-1-naphthalenyl- (CA INDEX NAME)

PAGE 1-A

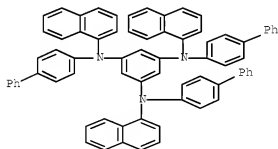


PAGE 1-B



RN 765279-09-2 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris([1,1'-biphenyl]-4-yl)-N1,N3,N5-tri-1-naphthalenyl- (CA INDEX NAME)



IC ICM C07C211-58

CC 25-4 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)

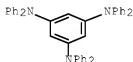
IT 765279-08-1P 765279-09-2P

RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)

(preparation of novel tris(arylamino)benzene derivs.)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR
THIS RECORD. ALL CITATIONS AVAILABLE IN
THE RE FORMAT

ACCESSION NUMBER: 2002:8812 HCAPLUS [Full-text](#)
DOCUMENT NUMBER: 136:191337
TITLE: Durability and characteristics of organic EL device using amorphous materials as hole transporting materials
AUTHOR(S): Oh, Se Young; Lee, Chang Ho; Kim, Seung Wook
CORPORATE SOURCE: Department of Chemical Engineering, Sogang University, Seoul, 121-742, S. Korea
SOURCE: Molecular Crystals and Liquid Crystals Science and Technology, Section A: Molecular Crystals and Liquid Crystals (2001), 371, 423-426
CODEN: MCLCE9; ISSN: 1058-725X
PUBLISHER: Gordon & Breach Science Publishers
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Amorphous mol. materials such as 1,3,5-tris(4-chlorophenyl phenylamino)benzene, p-ClTDAB and p-BrTDAB were synthesized and then organic electroluminescent (EL) devices using the amorphous compds. as hole transporting materials were fabricated. ITO/p-XTDAB (X=Cl or Br)/Alq3/Al device emitted green light with the brightness of 1300 cd/m2. Especially, the durability and EL performance were improved by p-XTDAB compared to TDAB.
IT 126717-23-5
RL: DEV (Device component use); PRP (Properties); USES (Uses) (TDAB; durability and characteristics of organic EL device using amorphous materials as hole transporting materials)
RN 126717-23-5 HCAPLUS
CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX NAME)



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
IT 126717-23-5
RL: DEV (Device component use); PRP (Properties); USES (Uses) (TDAB; durability and characteristics of organic EL device using amorphous materials as hole transporting materials)
REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 12 OF 35 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2001:924914 HCAPLUS [Full-text](#)
DOCUMENT NUMBER: 136:158432
TITLE: Structural effects of TDAB amorphous hole transporting materials on performance of organic EL device
AUTHOR(S): Lee, Chang Ho; Kim, Seung Wook; Oh, Se Young
CORPORATE SOURCE: Department of Chemical Engineering, Sogang University, Seoul, 121-742, S. Korea
SOURCE: Molecular Crystals and Liquid Crystals Science and Technology, Section A: Molecular Crystals and Liquid Crystals (2001), 370, 53-56

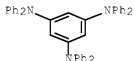
PUBLISHER: CODEN: MCLCE9; ISSN: 1058-725X
Gordon & Breach Science Publishers
DOCUMENT TYPE: Journal
LANGUAGE: English

AB For the fabrication of high stable organic electroluminescent device, amorphous mol. materials such as 1,3,5-tris(diphenylamino)benzene (TDAB), 1,3,5-tris(4-chlorophenyl[phenyl]amino)benzene (p-ClTDAB), p-BrTDAB, and p-MeOTDAB were synthesized as hole transporting materials and studied ITO/p-XTDAB (X = Br, Cl, MeO)/Alq3/Al device emitted green light. Organic EL device consisting of ITO/p-BrTDAB/Alq3/Al showed high EL intensity. The durability and EL performance of organic EL device using the amorphous hole transporting material were studied.

IT 126717-23-5, 1,3,5-Tris(diphenylamino)benzene
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(structural effects of amorphous hole transporting material on performance of organic electroluminescent device)

RN 126717-23-5 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX NAME)



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 22, 76

IT 126717-23-5, 1,3,5-Tris(diphenylamino)benzene 177659-52-8,
1,3,5-Tris(4-chlorophenyl[phenyl]amino)benzene 177659-53-9,
1,3,5-Tris(4-bromophenyl[phenyl]amino)benzene 395083-18-8
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(structural effects of amorphous hole transporting material on performance of organic electroluminescent device)

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 13 OF 35 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2001:403128 HCAPLUS Full-text
DOCUMENT NUMBER: 135:20079
TITLE: Transition metal complex catalysts and trimerization of ethylene using them
INVENTOR(S): Murakita, Shigeyuki; Yamamoto, Toshihide; Okada, Hisanori; Yoshida, Osamu
PATENT ASSIGNEE(S): Tosoh Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001149788	A	20010605	JP 1999-339889	

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PRIORITY APPLN. INFO.:

JP 1999-339889

199911
30

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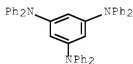
OTHER SOURCE(S): MARPAT 135:20079

AB Ethylene is trimerized in the presence of (A) transition metal complexes coordinated with amino-substituted benzene derivative ligands and optionally (B) tertiary aromatic amines and/or N-containing heterocyclic compds. Thus, trimerization of ethylene at 80° for 30 min in the presence of 1,3,5-tris(diphenylamino)benzenechromium tricarbonyl(0), in which the tris(diphenylamino)benzene ligand is facially coordinated to Cr, under radiation of light to give 1-hexene with selectivity 98.5%.

IT 126717-23-5, 1,3,5-Tris(diphenylamino)benzene
RL: RCT (Reactant); RACT (Reactant or reagent)
(transition metal complex catalysts for trimerization of ethylene for preparation of 1-hexene in high selectivity)

RN 126717-23-5 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX NAME)



IC ICM B01J031-22

ICS C07B061-00; C07C002-34; C07C011-107; C08F004-69

CC 35-2 (Chemistry of Synthetic High Polymers)

IT 74-85-1, Ethylene, reactions 13007-92-6, Chromium hexacarbonyl

126717-23-5, 1,3,5-Tris(diphenylamino)benzene

RL: RCT (Reactant); RACT (Reactant or reagent)

(transition metal complex catalysts for trimerization of ethylene for preparation of 1-hexene in high selectivity)

L37 ANSWER 14 OF 35 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2000:553887 HCAPLUS Full-text

DOCUMENT NUMBER: 133:321659

TITLE: Synthesis of 1,3,5-tris[4-(diarylamino)phenyl]benzene and 1,3,5-tris(diarylamino)benzene derivatives

AUTHOR(S): Plater, M. John; McKay, Murray; Jackson, Toby
CORPORATE SOURCE: Department of Chemistry, University of Aberdeen, Aberdeen, AB24 3UE, UK

SOURCE: Perkin 1 (2000), (16), 2695-2701

CODEN: PERKF9; ISSN: 1470-4358

PUBLISHER: Royal Society of Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 133:321659

AB The title compds. were prepared by Cu-catalyzed Ullmann coupling of aromatic amines with aryl iodides. Full spectroscopic details are reported. Solns. of 1,3,5-tris(diarylamino)benzenes in CDCl3 undergo H-D exchange on the central ring and readily turn green owing to partial oxidation by traces of dissolved O. The green color is quenched by the addition of ascorbic acid. The solns.

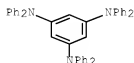
are more stable in CHCl₃ that was filtered through basic alumina to remove traces of acid. N-arylbenzenesulfonamides are converted to diarylamines by treatment with the Na salt of an aniline.

IT 126717-23-5P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of tris[(arylamino)phenyl]benzenes)

RN 126717-23-5 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX NAME)



CC 25-4 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)

IT 7511-49-1P 126717-23-5P 126717-25-7P 138143-23-4P

147951-36-8P 147951-38-0P 161581-07-3P 303051-41-4P

303051-42-5P 303051-43-6P 303051-45-8P 303051-46-9P

303051-47-0P 303051-48-1P 303051-86-7P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of tris[(arylamino)phenyl]benzenes)

REFERENCE COUNT: 48 THERE ARE 48 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L37 ANSWER 15 OF 35 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2000:137260 HCAPLUS Full-text

DOCUMENT NUMBER: 132:180365

TITLE: Preparation of tris(aminobiphenylamino)
compounds, their use as hole transporting
agents, and their applications
Ueda, Hideaki; Fujino, Yasumitsu; Furukawa,
Keiichi

PATENT ASSIGNEE(S): Minolta Camera Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 62 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000063335	A	20000229	JP 1998-230672	19980817
			<--	
JP 4081869	B2	20080430		
JP 2008047935	A	20080228	JP 2007-246621	20070925
			<--	
PRIORITY APPLN. INFO.:			JP 1998-230672	A3 19980817

OTHER SOURCE(S): CASREACT 132:180365; MARPAT 132:180365
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The title compds. I [A = trivalent organic group selected from 7 groups including 1,3,5-benzenetriyl, Q, Q1, Q2, etc.; Ar1 = (un)substituted aryl, heterocyclyl; R1, R2 = (un)substituted aralkyl, aryl, heterocyclyl or NR1R2 may be a cyclyl; R3 = H, alkyl] and 4 processes for the preparation of I are claimed. Also claimed are hole-transporting agents comprising I, and organic electroluminescent devices and electrophotog. photoreceptors containing I. A mixture of 1,3,5-C6H3(NHC6H4Me-4)3, 4-IC6H4C6H4NPh(C6H4Me-3)-4, K2CO3, Cu, 18-crown-6-ether, and o-C6H4Cl2 was refluxed for 24 h to give 41.4% I (A = 1,3,5-benzenetriyl, Ar1 = C6H4Me-4, R1 = Ph, R2 = C6H4Me-3, R3 = H) (II). A function-separated electrophotog. photoreceptor containing II in the charge-transporting layer was also fabricated.

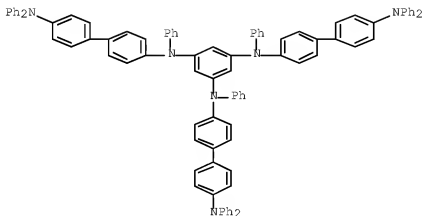
IT 259541-39-4

RL: DEV (Device component use); USES (Uses)

(preparation of tris(aminobiphenylamino) compds. as hole transporting agents for electroluminescent devices and electrophotog. photoreceptors)

RN 259541-39-4 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-N1,N3,N5-triphenyl- (CA INDEX NAME)



IC ICM C07C211-54

ICS C07C209-02; C07D209-80; C09K011-06; G03G005-06; H05B033-22

CC 25-4 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)

Section cross-reference(s): 74

IT 259541-39-4 259541-40-7 259541-42-9 259541-43-0

259541-45-2 259541-48-5 259541-49-6 259541-50-9 259541-51-0

259541-52-1 259541-53-2 259541-54-3 259541-55-4 259541-56-5

259541-57-6 259541-58-7 259541-59-8 259541-60-1 259541-61-2

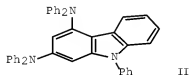
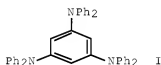
259541-62-3 259541-63-4 259541-64-5 259541-65-6 259541-96-3

RL: DEV (Device component use); USES (Uses)

(preparation of tris(aminobiphenylamino) compds. as hole transporting agents for electroluminescent devices and

electrophotog. photoreceptors)

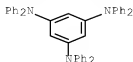
L37 ANSWER 16 OF 35 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2000:129529 HCAPLUS Full-text
DOCUMENT NUMBER: 132:279083
TITLE: Photochemical reaction of 1,3,5-
tris(diphenylamino)benzene
AUTHOR(S): Moriwaki, Kazuyuki; Yoshikawa, Satoru; Kotani,
Yoshiko; Ishida, Akito; Shiota, Yasuhiko
CORPORATE SOURCE: Department of Applied Chemistry, Faculty of
Engineering, Osaka University, Suita, 565-0871,
Japan
SOURCE: Journal of Photopolymer Science and Technology (1999), 12(5), 777-780
CODEN: JSTEEW; ISSN: 0914-9244
PUBLISHER: Technical Association of Photopolymers, Japan
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 132:279083
GI



AB Photochem. reaction of a new aromatic amine with dual reaction sites for ring closure, 1,3,5-tris(diphenylamino)benzene I, was investigated to clarify its photochem. reaction course and the effect of oxygen on the photochem. reaction. It was found that I undergoes photocyclization in solution in the absence or presence of oxygen to produce N-phenyl-2,4-bis(diphenylamino)carbazole II. The product anal. and the result of laser flash photolysis indicate that the reaction mechanism for the photocyclization of I is different between the deaerated and oxygen-saturated systems. Photocyclization reaction of I in the absence of oxygen takes place via the electronically excited triplet state of I, followed by the formation of the dihydrocarbazole. In the presence of oxygen, the dihydrocarbazole radical cation is suggested as an intermediate in the photocyclization.

IT 126717-23-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);
RACT (Reactant or reagent)
(preparation and photocyclization of tris(diphenylamino)benzene to
give a bis(diphenylamino)carbazole derivative)

RN 126717-23-5 HCAPLUS
CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX
NAME)



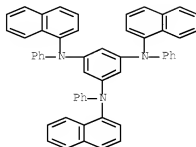
CC 27-11 (Heterocyclic Compounds (One Hetero Atom))
 Section cross-reference(s): 22
 IT 126717-23-5P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);
 RACT (Reactant or reagent)
 (preparation and photocyclization of tris(diphenylamino)benzene to
 give a bis(diphenylamino)carbazole derivative)
 REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L37 ANSWER 17 OF 35 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1999:731753 HCAPLUS Full-text
 DOCUMENT NUMBER: 131:358324
 TITLE: Polymer-stabilized hole-transporting material
 for organic electroluminescent display device
 INVENTOR(S): Shi, Song; So, Franky; Lee, H. C.
 PATENT ASSIGNEE(S): Motorola, Inc., USA
 SOURCE: U.S., 6 pp.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 5985417	A	19991116	US 1996-706898	199609 03

PRIORITY APPLN. INFO.: <--
 US 1996-706898
 199609
 03

OTHER SOURCE(S): MARPAT 131:358324
 AB An organic electroluminescent display device comprises a plurality of organic
 layers including a hole-transporting layer disposed between opposing
 electrodes. The hole-transporting layer contains a mol. hole-transporting
 material stabilized by a polymeric network.
 IT 250267-08-4
 RL: DEV (Device component use); TEM (Technical or engineered
 material use); USES (Uses)
 (electroluminescent display devices with polymer-stabilized
 hole-transporting layers containing)
 RN 250267-08-4 HCAPLUS
 CN 1,3,5-Benzenetriamine, N1,N3,N5-tri-1-naphthalenyl-N1,N3,N5-
 triphenyl- (CA INDEX NAME)



IC ICM B32B009-00

INCL 428195000

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 73IT 123847-85-8, 4,4'-Bis[N-(1-naphthyl)-N-phenylamino]biphenyl
197024-89-8 250267-08-4RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(electroluminescent display devices with polymer-stabilized hole-transporting layers containing)

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 18 OF 35 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1999:175849 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 130:198789

TITLE: Photoelectric conversion device and solar cell with dye-sensitized nanoparticulate semiconductor and organic hole transporting agent

INVENTOR(S): Shiratsuchi, Kentaro; Takizawa, Hiroo

PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan

SOURCE: Eur. Pat. Appl., 27 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 901175	A2	19990310	EP 1998-116815	19980904
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EP 901175	A3	19990901		
EP 901175	B1	20020807		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 11144773	A	19990528	JP 1998-186935	19980617

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US 6084176 A 20000704 US 1998-145268 199809
02
<--
AT 222028 T 20020815 AT 1998-116815 199809
04
<--
PRIORITY APPLN. INFO.: JP 1997-257535 A 199709
05
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JP 1998-186935 A 199806
17
<--

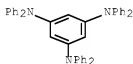
AB A photoelec. conversion device has a layer of dye-sensitized nanoparticulate semiconductor and a hole transporting layer containing an organic hole transporting agent. The dye-sensitized photoelec. conversion device is fully durable. A solar cell comprising the photoelec. conversion device is also provided.

IT 126717-23-5

RL: DEV (Device component use); USES (Uses)
(photoelec. cell and solar cell with dye-sensitized
nanoparticulate semiconductor and organic hole transporting agent)

RN 126717-23-5 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX
NAME)



IC ICM H01L051-20
ICS H01L051-30; H01G009-20
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 76
IT 603-34-9, Triphenyl amine 2217-07-4, Dipropyl aniline 9003-53-6
13463-67-7, Titania, uses 14118-16-2 15546-43-7 20440-94-2
20441-06-9 20441-07-0 25067-59-8, Polyvinyl carbazole
25069-74-3 58328-31-7 58473-78-2 65181-78-4 73587-30-1
78099-29-3 92740-87-9 105389-36-4 116153-35-6 120259-94-1
126717-23-5 131681-30-6 138143-23-4 139417-53-1
141460-19-7 141546-10-3 149005-03-8 152759-09-6 164724-31-6
164724-33-8 177167-90-7 204200-10-2 219727-00-1 220859-74-5
220859-75-6 220859-76-7 220859-77-8 220859-78-9 220859-79-0
220859-80-3 220859-81-4 220859-82-5 220865-56-5 220865-60-1
220865-64-5 220865-73-6
RL: DEV (Device component use); USES (Uses)
(photoelec. cell and solar cell with dye-sensitized
nanoparticulate semiconductor and organic hole transporting agent)

L37 ANSWER 19 OF 35 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1997:747525 HCAPLUS Full-text
DOCUMENT NUMBER: 128:75007
ORIGINAL REFERENCE NO.: 128:14671a,14674a

TITLE: Models for charged organic high-spin systems; synthesis and cyclic voltammetry of one- and two-dimensional diarylamino benzenes

AUTHOR(S): Yano, Masafumi; Furuichi, Mutsuo; Sato, Kazunobu; Shiomi, Daisuke; Ichimura, Akio; Abe, Kyo; Takui, Takeji; Itoh, Koichi

CORPORATE SOURCE: Department Chemistry, Faculty Science, Osaka City University, Osaka, 558, Japan

SOURCE: Molecular Crystals and Liquid Crystals Science and Technology, Section A: Molecular Crystals and Liquid Crystals (1997), 306, 501-506

CODEN: MCLCE9; ISSN: 1058-725X

PUBLISHER: Gordon & Breach Science Publishers

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 128:75007

AB A series of 1,3-bis- (DABs) and 1,3,5-tris(diarylamino)benzenes (TABs) were synthesized as model precursors for polycationic π -conjugated high-spin systems. CV measurements at low temperature showed that the chemical stability in solution of mono- and polycationic oxidation states of the various DABs and TABs derivs. depend on their structures. Correlation between the chemical stability of these cations and their mol. structure is discussed.

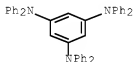
IT 126717-23-5P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(synthesis and cyclic voltammetry of one- and two-dimensional diarylamino benzenes as models for charged organic high-spin systems)

RN 126717-23-5 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX NAME)



CC 22-7 (Physical Organic Chemistry)

IT 92899-33-7P 126717-23-5P 126717-25-7P 126738-30-5P

127580-03-4P 134257-64-0P 177659-51-7P 177659-52-8P

186494-37-1P 186494-38-2P 186494-39-3P 186494-40-6P

186494-41-7P 186494-42-8P 189764-91-8P 189764-92-9P

189764-93-0P 189764-94-1P 189764-95-2P 200728-88-7P

200728-89-8P 200728-90-1P 200728-91-2P 200728-92-3P

200728-93-4P 200728-94-5P 200728-95-6P 200728-96-7P

200728-97-8P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

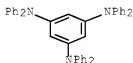
(synthesis and cyclic voltammetry of one- and two-dimensional diarylamino benzenes as models for charged organic high-spin systems)

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

DOCUMENT NUMBER: 126:343347
ORIGINAL REFERENCE NO.: 126:66773a,66776a
TITLE: Models for positive charge fluctuation vs. spin polarization in organic systems; synthesis and cyclic voltammetry of 2D and 1D hyperbranched π -aryl-based amines
AUTHOR(S): Yano, M.; Furuichi, M.; Sato, K.; Shiomi, D.; Ichimura, A.; Abe, K.; Takui, T.; Itoh, K.
CORPORATE SOURCE: Department of Chemistry, Faculty of Science, Osaka City University, Sumiyoshi-ku, Osaka, 558, Japan
SOURCE: Synthetic Metals (1997), 85(1-3), 1665-1666
CODEN: SYMEDZ; ISSN: 0379-6779
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB A series of substituted N,N,N',N',N'',N'''-hexaphenyl-1,3,5- benzenetriamine (TAB) I (R = H, Cl, F, Me, OMe; R1 = H, Cl, F, Me, OMe, CF3) and N,N,N',N'-tetraphenyl-1,3-benzenediamine (DAB) II (same R; R2 = H, Me) were synthesized as models for pos. charged fluctuation vs. spin polarization in organic systems. CV measurements at low temperature showed that the chemical stability-in-solution of mono and poly-cationic oxidation states of the various HPTABs and TPDABs derivs. depend on their mol. structures and substituents.
IT 126717-23-5
RL: PRP (Properties)
(preparation of phenylbenzenetriamines and phenylbenzenediamines as pos. charge fluctuation and spin polarization models)
RN 126717-23-5 HCAPLUS
CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX NAME)



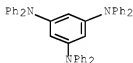
CC 25-4 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
Section cross-reference(s): 22
IT 126717-23-5 126717-25-7 134257-64-0 177659-51-7
177659-52-8 189764-91-8 189764-92-9 189764-93-0 189764-94-1
189764-95-2
RL: PRP (Properties)
(preparation of phenylbenzenetriamines and phenylbenzenediamines as pos. charge fluctuation and spin polarization models)
REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 21 OF 35 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1997:113320 HCAPLUS Full-text
 DOCUMENT NUMBER: 126:164065
 ORIGINAL REFERENCE NO.: 126:31587a,31590a
 TITLE: Organic thin-film LED and manufacture thereof
 INVENTOR(S): Nanba, Noryoshi; Nakayama, Masatoshi; Nakatani, Kenji
 PATENT ASSIGNEE(S): Tdk Electronics Co Ltd, Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08333568	A	19961217	JP 1995-166954	19950608

PRIORITY APPLN. INFO.: JP 1995-166954
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 19950608

AB A long-life LED comprises a hole-injection or a hole- injection/transport layer formed by glow-discharge polymerization of ≥ 1 monomer having 1-12 aromatic ring(s) interconnected by hole-transporting N-containing bridge(s).
 IT 126717-23-5, 1,3,5-Tris(diphenylamino)benzene
 RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
 (manufacture of organic thin-film LED)
 RN 126717-23-5 HCAPLUS
 CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX NAME)



IC ICM C09K011-06
 ICS H01L033-00; H05B033-22
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 38
 IT 62-53-3, Aniline, uses 603-34-9, Triphenyl amine 2085-33-8, Tris(8-quinolinolato)aluminum 7664-41-7, Ammonia, uses 7727-37-9, Nitrogen, uses 14118-16-2, N,N,N',N'-Tetraphenyl-p-phenylenediamine 65181-78-4, N,N'-Diphenyl-N,N'-bis(3-methylphenyl)-[1,1'-biphenyl]-4,4'-diamine 116153-35-6 123847-85-8 126717-23-5, 1,3,5-Tris(diphenylamino)benzene 138143-23-4, 1,3,5-Tris(3-methylphenylphenylamino)benzene 139092-78-7, 4,4',4'''-Tris(N-carbazolyl)triphenylamine 151888-76-5

186256-01-9 186256-02-0 186258-38-8 187182-39-4
RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(manufacture of organic thin-film LED)

L37 ANSWER 22 OF 35 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1996:306798 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 125:86058

ORIGINAL REFERENCE NO.: 125:16217a,16220a

TITLE: Magnetic properties of 1,3,5-tris[bis(p-methoxyphenyl)amino]benzene cation radicals
Yoshizawa, Kazunari; Hatanaka, Masahi; Ago, Hiroki; Tanaka, Kazuyoshi; Yamabe, Tokio

CORPORATE SOURCE: Sch. Eng., Kyoto Univ., Kyoto, 606-01, Japan

SOURCE: Bulletin of the Chemical Society of Japan (1996), 69(5), 1417-1422

CODEN: BCSJAB; ISSN: 0009-2673

PUBLISHER: Nippon Kagakukai

DOCUMENT TYPE: Journal

LANGUAGE: English

AB In order to pursue the possibility of charge-transfer organic ferromagnets, magnetic properties of the monocationic ClO₄⁻ and BF₄⁻ salts of 1,3,5-tris[bis(p-methoxyphenyl)amino]benzene (TMBAB) were characterized by means of ESR and a Faraday-type magnetic balance. MNDO-PM3 calcs. predicted 1,3,5-tris(diphenylamino)benzene (TDAB) dication and trication to be ground-state triplet and quartet, resp. Thus, these triaminobenzenes fulfill the necessary precondition for the appearance of intermol. ferromagnetic coupling based on McConnell's second model. Neg. Weiss consts. (-1 to 0 K) and low spin concns. (7-8%) were observed for TMBAB-ClO₄ and TMBAB-BF₄, although, according to this rule, intermol. ferromagnetic coupling is expected to occur for these systems.

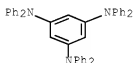
IT 126717-23-5, 1,3,5-Benzenetriamine, N,N,N',N',N'',N'''-hexaphenyl- 140848-82-4, 1,3,5-Benzenetriamine, N,N,N',N',N'',N'''-hexaphenyl-, radical ion(3+) 158414-88-1, 1,3,5-Benzenetriamine, N,N,N',N',N'',N'''-hexaphenyl-, radical ion(1+) 178455-26-0

RL: PRP (Properties)

(structure and energy of)

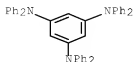
RN 126717-23-5 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX NAME)

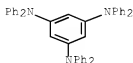


RN 140848-82-4 HCAPLUS

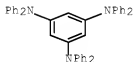
CN 1,3,5-Benzenetriamine, N,N,N',N',N'',N'''-hexaphenyl-, radical ion(3+) (9CI) (CA INDEX NAME)



RN 158414-88-1 HCAPLUS
 CN 1,3,5-Benzenetriamine, N,N,N',N',N'',N'''-hexaphenyl-, radical
 ion(1+) (9CI) (CA INDEX NAME)



RN 178455-26-0 HCAPLUS
 CN 1,3,5-Benzenetriamine, N,N,N',N',N'',N'''-hexaphenyl-, radical
 ion(2+) (9CI) (CA INDEX NAME)



CC 22-10 (Physical Organic Chemistry)
 Section cross-reference(s): 77
 IT 126717-23-5, 1,3,5-Benzenetriamine, N,N,N',N',N'',N'''-
 hexaphenyl- 140848-82-4, 1,3,5-Benzenetriamine,
 N,N,N',N',N'',N'''-hexaphenyl-, radical ion(3+) 158414-88-1
 , 1,3,5-Benzenetriamine, N,N,N',N',N'',N'''-hexaphenyl-, radical
 ion(1+) 178455-26-0
 RL: PRP (Properties)
 (structure and energy of)

L37 ANSWER 23 OF 35 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1995:636338 HCAPLUS [Full-text](#)
 DOCUMENT NUMBER: 123:156360
 ORIGINAL REFERENCE NO.: 123:27607a,27610a
 TITLE: Electrophotographic photoreceptors using triamine
 compound as charge-transporting agent
 INVENTOR(S): Nakamura, Yoichi; Kazama, Toyoki
 PATENT ASSIGNEE(S): Fuji Electric Co Ltd, Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07084383	A	19950331	JP 1993-232113	199309 20

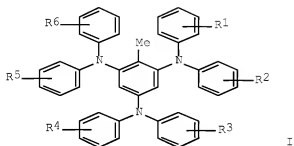
PRIORITY APPLN. INFO.:

JP 1993-232113

199309
20

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GI



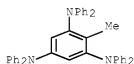
AB The photoreceptors comprise a conductive substrate laminated with a photosensitive layer containing ≥ 1 triamine compound I (R1-6 = H, alkyl, alkoxy) as a charge-transporting agent. The photoreceptors show high photosensitivity and improved cyclicability. Thus, an Al-evaporated polyester film was coated with a charge-generating layer containing X-type metal-free phthalocyanine and with a charge-transporting layer containing I (R1-6 = H) to give a photoreceptor.

IT 167022-36-8

RL: DEV (Device component use); PRP (Properties); USES (Uses)
(electrophotog. photoreceptors containing benzenetriamines as charge transporters)

RN 167022-36-8 HCAPLUS

CN 1,3,5-Benzenetriamine, 2-methyl-N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX NAME)



IC ICM G03G005-06

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT 167022-36-8 167022-37-9

RL: DEV (Device component use); PRP (Properties); USES (Uses)
(electrophotog. photoreceptors containing benzenetriamines as charge transporters)

L37 ANSWER 24 OF 35 HCAPLUS COPYRIGHT 2008 ACS on STN

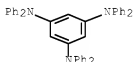
ACCESSION NUMBER: 1995:531024 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 124:29036

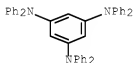
ORIGINAL REFERENCE NO.: 124:5579a,5582a

TITLE: Molecular orbital study on cationic states of triphenylene and 1,3,5-

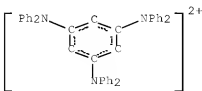
tris(diphenylamino)benzene as a design of charge-transfer organic ferromagnets
 AUTHOR(S): Yoshizawa, Kazunari; Hatanaka, Masashi; Tanaka, Kazuyoshi; Yamabe, Tokio
 CORPORATE SOURCE: Inst. for Fundamental Chemistry, Kyoto, 606, Japan
 SOURCE: Synthetic Metals (1995), 71(1-3), 1829-30
 CODEN: SYMEDZ; ISSN: 0379-6779
 PUBLISHER: Elsevier
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB For the design of charge-transfer organic ferromagnets, the electronic structures of the neutral and mono-, di- and tricationic states of triphenylene and 1,3,5-tris(diphenylamino)benzene (TDAB) are studied by the PM3-MO method. The high-spin states of the di- and trications of TDAB lie below the corresponding low-spin states.
 IT 126717-23-5, 1,3,5-Tris(diphenylamino)benzene
 158414-88-1 171675-14-2 171746-15-9
 RL: PRP (Properties)
 (electronic structure of)
 RN 126717-23-5 HCAPLUS
 CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX NAME)



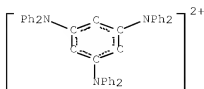
RN 158414-88-1 HCAPLUS
 CN 1,3,5-Benzenetriamine, N,N,N',N',N'',N''-hexaphenyl-, radical ion(1+) (9CI) (CA INDEX NAME)



RN 171675-14-2 HCAPLUS
 CN Cyclohexadienediylum, 1,3,5-tris(diphenylamino)- (9CI) (CA INDEX NAME)



RN 171746-15-9 HCAPLUS
 CN Cyclohexadienediylum, 1,3,5-tris(diphenylamino)-, radical ion(1+)
 (9CI) (CA INDEX NAME)



CC 22-2 (Physical Organic Chemistry)
 Section cross-reference(s): 77
 IT 217-59-4, Triphenylene 34507-32-9, Triphenylene monocation
 126717-23-5, 1,3,5-Tris(diphenylamino)benzene 138878-64-5,
 Triphenylene dication 158414-88-1 171675-13-1,
 Triphenylene trication 171675-14-2 171746-15-9
 RL: PRP (Properties)
 (electronic structure of)

L37 ANSWER 25 OF 35 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1995:499833 HCAPLUS Full-text
 DOCUMENT NUMBER: 123:32768
 ORIGINAL REFERENCE NO.: 123:6051a,6054a
 TITLE: Preparation of tris(diarylamino)benzenes as
 additives for resins, photosensitizers, or
 luminescent materials
 INVENTOR(S): Fukumura, Takanori; Wada, Masaru; Nagata,
 Teruyuki
 PATENT ASSIGNEE(S): Mitsui Toatsu Chemicals, Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

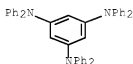
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07033717	A	19950203	JP 1993-179715	19930721
JP 3177351	B2	20010618		
PRIORITY APPLN. INFO.:			JP 1993-179715	19930721
OTHER SOURCE(S):			CASREACT 123:32768; MARPAT 123:32768	
GI				

AB The title compds. I (R, R1 = H, lower alkyl), useful as additives for resins, photosensitizers, luminescent materials, etc. (no data), are prepared by reaction of tris(arylamino)benzenes II (R = H, lower alkyl) with cyclohexanones III (R1 = H, lower alkyl) in the presence of H transfer catalysts. A mixture of II (R = H), cyclohexanone, Pd/C, propionic acid, and PhOH was stirred at 180-190° for 20 h to give 65.4% I (R = R1 = H).

IT 126717-23-5P, 1,3,5-Tris(diphenylamino)benzene
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
(preparation of tris(diarylamino)benzenes from tris(arylamino)benzenes and cyclohexanones with H transfer catalysts)

RN 126717-23-5 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX NAME)



IC ICM C07C211-54
ICS B01J023-44; C07C209-24

ICA C07B061-00

CC 25-4 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
Section cross-reference(s): 37, 73, 74

IT 126717-23-5P, 1,3,5-Tris(diphenylamino)benzene
126717-25-7P 138143-23-4P 142143-88-2P
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
(preparation of tris(diarylamino)benzenes from tris(arylamino)benzenes and cyclohexanones with H transfer catalysts)

L37 ANSWER 26 OF 35 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1995:439876 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 123:111466

ORIGINAL REFERENCE NO.: 123:19901a,19904a

TITLE: Cation radicals of 1,3,5-tris(diarylamino)benzenes

AUTHOR(S): Stickley, Kurt R.; Blackstock, Silas C.

CORPORATE SOURCE: Department of Chemistry, Vanderbilt Univ., Nashville, TN, 37235, USA

SOURCE: Tetrahedron Letters (1995), 36(10), 1585-8

CODEN: TELEAY; ISSN: 0040-4039

PUBLISHER: Elsevier

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Cyclic voltammetry and ESR reveal the nature of the cation radicals of some 1,3,5-tris(diarylamino)benzenes. Results show effectively delocalized radical cations with long solution lifetimes in cold media but with much less kinetic stability at ambient temperature than their monomeric triarylammonium cation radical counterparts. Intramol. ortho coupling, perhaps via disproportionation, is a postulated cation radical decay mode.

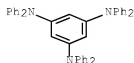
IT 126717-23-5P, 1,3,5-Benzenetriamine, N,N,N',N',N'',N'''-hexaphenyl
RL: PRP (Properties); SPN (Synthetic preparation); PREP

(Preparation)

(preparation and properties of aryl-1,3,5-benzenetriamine radical cations)

RN 126717-23-5 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX NAME)



CC 22-10 (Physical Organic Chemistry)

Section cross-reference(s): 25, 72

IT 126717-23-5P, 1,3,5-Benzenetriamine, N,N,N',N',N'',N'''-

hexaphenyl 126738-30-5P, 1,3,5-Benzenetriamine,

N,N,N',N',N'',N'''-hexakis(4-methoxyphenyl) 134257-64-0P,

1,3,5-Benzenetriamine, N,N,N',N',N'',N'''-hexakis(4-methylphenyl)

159506-66-8P, 1,3,5-Benzenetriamine, N,N,N',N',N'',N'''-hexakis(4-

methoxyphenyl), radical ion(1+) 159573-71-4P 165820-81-5P

165820-82-6P 165820-83-7P 165820-84-8P 165820-85-9P

165820-86-0P 165905-29-3P 165967-01-1P

RL: PRP (Properties); SPN (Synthetic preparation); PREP

(Preparation)

(preparation and properties of aryl-1,3,5-benzenetriamine radical cations)

L37 ANSWER 27 OF 35 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1995:198957 HCAPLUS Full-text

DOCUMENT NUMBER: 122:30837

ORIGINAL REFERENCE NO.: 122:6091a,6094a

TITLE: Triplet Dication and Quartet Trication of a Triaminobenzene

AUTHOR(S): Stickley, Kurt R.; Blackstock, Silas C.

CORPORATE SOURCE: Department of Chemistry, Vanderbilt University, Nashville, TN, 37235, USA

SOURCE: Journal of the American Chemical Society (1994), 116(25), 11576-7

CODEN: JACSAT; ISSN: 0002-7863

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB 1,3,5-Tris(di-p-anisylamino)benzene is shown to possess solution-stable cation, dication, and trication oxidation states at low temperature. The di- and trication structures are ground-state triplet and quartet mols., resp.

IT 159506-65-7P

RL: PNU (Preparation, unclassified); PRP (Properties); PREP

(Preparation)

(formation and ESR of)

RN 159506-65-7 HCAPLUS

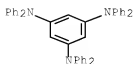
CN 1,3,5-Benzenetriamine, N,N,N',N',N'',N'''-hexaphenyl-, radical ion(1+), dimer (9CI) (CA INDEX NAME)

CM 1

CRN 158414-88-1

CMF C42 H33 N3

CCI RIS



CC 22-7 (Physical Organic Chemistry)
IT 159506-65-7P 159506-66-8P, 1,3,5-Tris(di-p-
anisylamino)benzene cation radical
RL: PNU (Preparation, unclassified); PRP (Properties); PREP
(Preparation)
(formation and ESR of)

L37 ANSWER 28 OF 35 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1994:700714 HCAPLUS Full-text

DOCUMENT NUMBER: 121:300714

ORIGINAL REFERENCE NO.: 121:55045a,55048a

TITLE: Photocyclization reaction of
1,3,5-tris(diphenylamino)benzene

AUTHOR(S): Yoshikawa, Satoru; Kotani, Yoshiko; Shiota,
Yasuhiko

CORPORATE SOURCE: Faculty of Engineering, Osaka University, Suita,
565, Japan

SOURCE: Journal of Photopolymer Science and Technology (
1994), 7(1), 83-4

CODEN: JSTEED; ISSN: 0914-9244

DOCUMENT TYPE: Journal

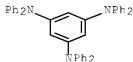
LANGUAGE: English

AB Direct irradiation of a C6H6 solution of the title compound with light of
wavelength >313 nm for 20 h under constant bubbling of O2 gave 70% 2,4-
bis(diphenylamino)-N-phenylcarbazole. The reaction proceeded via the excited
triplet state of the starting compound

IT 126717-23-5P, 1,3,5-Tris(diphenylamino)benzene
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);
RACT (Reactant or reagent)
(photocyclization reaction of tris(diphenylamino)benzene)

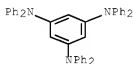
RN 126717-23-5 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX
NAME)



CC 27-11 (Heterocyclic Compounds (One Hetero Atom))
Section cross-reference(s): 22
IT 126717-23-5P, 1,3,5-Tris(diphenylamino)benzene
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);
RACT (Reactant or reagent)
(photocyclization reaction of tris(diphenylamino)benzene)

L37 ANSWER 29 OF 35 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1994:640557 HCAPLUS [Full-text](#)
DOCUMENT NUMBER: 121:240557
ORIGINAL REFERENCE NO.: 121:43685a,43688a
TITLE: Electrochemical oxidation of
1,3,5-tris(diphenylamino)benzene (TDAB) for
polyradical material
AUTHOR(S): Yoshizawa, Kazunari; Ito, Akihiro; Tanaka,
Kazuyoshi; Yamabe, Tokio
CORPORATE SOURCE: Division of Molecular Engineering, Faculty of
Engineering, Kyoto University, Sakyo-ku, Kyoto,
606-01, Japan
SOURCE: Synthetic Metals (1994), 66(1), 81-3
CODEN: SYMEDZ; ISSN: 0379-6779
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Electrochem. coupling of 1,3,5-tris(diphenylamino)benzene (TDAB) occurs in
dichloromethane or trichloroethane solution in the presence of
tetrabutylammonium tetrafluoroborate or perchlorate. The obtained material
contains radical cations, the spin concentration of which is of the order 10¹⁹
g⁻¹. An anodic reaction pathway of TDAB is proposed from the dimerization
mechanism of the triphenylaminium radical cation.
IT 158414-89-2P, 1,3,5-Tris(diphenylamino)benzene radical
ion(1+) tetrafluoroborate(1-) 158414-90-5P,
1,3,5-Tris(diphenylamino)benzene radical ion(1+) perchlorate
RL: PEP (Physical, engineering or chemical process); PNU
(Preparation, unclassified); PRP (Properties); RCT (Reactant); PREP
(Preparation); PROC (Process); RACT (Reactant or reagent)
(electrochem. formation and IR spectrum and spin concns. of)
RN 158414-89-2 HCAPLUS
CN 1,3,5-Benzenetriamine, N,N,N',N',N'',N'''-hexaphenyl-, radical
ion(1+), tetrafluoroborate(1-) (9CI) (CA INDEX NAME)
CM 1
CRN 158414-88-1
CMF C42 H33 N3
CCI RIS



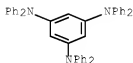
CM 2
CRN 14874-70-5
CMF B F4
CCI CCS



RN 158414-90-5 HCAPLUS
 CN 1,3,5-Benzenetriamine, N,N,N',N',N'',N'''-hexaphenyl-, radical
 ion(1+), perchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 158414-88-1
 CMF C42 H33 N3
 CCI RIS

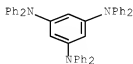


CM 2

CRN 14797-73-0
 CMF Cl O4



IT 126717-23-5, 1,3,5-Tris(diphenylamino)benzene
 RL: PEP (Physical, engineering or chemical process); PRP
 (Properties); RCT (Reactant); PROC (Process); RACT (Reactant or
 reagent)
 (electrochem. oxidation for polyradical material)
 RN 126717-23-5 HCAPLUS
 CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX
 NAME)



CC 72-2 (Electrochemistry)
 Section cross-reference(s): 22, 35
 IT 158414-89-2P, 1,3,5-Tris(diphenylamino)benzene radical

ion(1+) tetrafluoroborate(1-) 158414-90-5P,
1,3,5-Tris(diphenylamino)benzene radical ion(1+) perchlorate
RL: PEP (Physical, engineering or chemical process); PNU
(Preparation, unclassified); PRP (Properties); RCT (Reactant); PREP
(Preparation); PROC (Process); RACT (Reactant or reagent)
(electrochem. formation and IR spectrum and spin concns. of)
IT 126717-23-S, 1,3,5-Tris(diphenylamino)benzene
RL: PEP (Physical, engineering or chemical process); PRP
(Properties); RCT (Reactant); PROC (Process); RACT (Reactant or
reagent)
(electrochem. oxidation for polyradical material)

L37 ANSWER 30 OF 35 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1994:30300 HCAPLUS Full-text

DOCUMENT NUMBER: 120:30300

ORIGINAL REFERENCE NO.: 120:5709a,5712a

TITLE: Molecular orbital study on quartet molecules
with trigonal axis of symmetry

AUTHOR(S): Yoshizawa, Kazunari; Hatanaka, Masashi; Ito,
Akihiro; Tanaka, Kazuyoshi; Yamabe, Tokio

CORPORATE SOURCE: Fac. Eng., Kyoto Univ., Kyoto, 606-01, Japan
SOURCE: Molecular Crystals and Liquid Crystals Science
and Technology, Section A: Molecular Crystals
and Liquid Crystals (1993), 232,
323-32

CODEN: MCLCE9; ISSN: 1058-725X

DOCUMENT TYPE: Journal

LANGUAGE: English

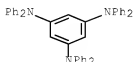
AB The ESR spectrum of the randomly oriented cationic triradical of 1,3,5-
tris(diphenylamino)benzene (TDAB) is shown to agree well with the theor.
prediction of a quartet ($S = 3/2$) mol. The electronic structures of non-
Kekule-type isoelectronic mols. 1,3,5-trimethylenebenzene (TMB) and 1,3,5-
triaminobenzene trication (TAB3+) are discussed by means of the ab initio MO
(MO) method in the UHF scheme. In TMB the quartet state with planar D_{3h} also
lies 16.9 kcal/mol below the lowest doublet state with an orthogonal geometry
where one of the amino groups is twisted out of the mol. plane. These quartet
ground states result from the nearly threefold-degenerate orbitals consisting
the nonbonding MOs. In addition, the quartet-doublet splitting energy of TDAB
is investigated using the semiempirical AM1 method.

IT 140848-82-4, 1,3,5-Tris(diphenylamino)benzene triradical
trication

RL: PRP (Properties)
(ESR and quartet ground state structure and conformation of, MO
calcn. of)

RN 140848-82-4 HCAPLUS

CN 1,3,5-Benzenetriamine, N,N,N',N',N'',N'''-hexaphenyl-, radical
ion(3+) (9CI) (CA INDEX NAME)



CC 22-3 (Physical Organic Chemistry)

Section cross-reference(s): 77

IT 140848-82-4, 1,3,5-Tris(diphenylamino)benzene triradical
trication

RL: PRP (Properties)

(ESR and quartet ground state structure and conformation of, MO calcn. of)

L37 ANSWER 31 OF 35 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1992:447799 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 117:47799

ORIGINAL REFERENCE NO.: 117:8503a,8506a

TITLE: ESR of the cationic triradical of
1,3,5-tris(diphenylamino)benzeneAUTHOR(S): Yoshizawa, Kazunari; Chano, Akihisa; Ito,
Akihiro; Tanaka, Kazuyoshi; Yamabe, Tokio;
Fujita, Hideo; Yamauchi, Jun; Shiro, Motoo
CORPORATE SOURCE: Fac. Eng., Kyoto Univ., Kyoto, 606-01, Japan
SOURCE: Journal of the American Chemical Society (
1992), 114(15), 5994-8

CODEN: JACSAT; ISSN: 0002-7863

DOCUMENT TYPE: Journal

LANGUAGE: English

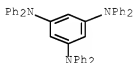
AB The ESR spectrum of the title species is discussed. The tricationic state was observed by cyclic voltammetry. The orange cationic triradical was prepared by oxidation with trifluoroacetic anhydride in the presence of tetrabutylammonium tetrafluoroborate in CH₂Cl₂. The ESR spectrum of the randomly oriented radicals in CH₂Cl₂ glass agrees well with the theor. prediction of a quartet (S = 3/2) spin state with a zero-field splitting parameter D' of 13.1 G (0.0012 cm⁻¹). This is the first observation of a high spin state of a cationic radical.

IT 140848-82-4P

RL: PRP (Properties); FORM (Formation, nonpreparative); PREP
(Preparation)

(formation and ESR of)

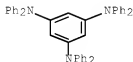
RN 140848-82-4 HCAPLUS

CN 1,3,5-Benzenetriamine, N,N,N',N',N'',N'''-hexaphenyl-, radical
ion(3+) (9CI) (CA INDEX NAME)

IT 126717-23-5P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation, x-ray anal., and cyclic voltammetry of)

RN 126717-23-5 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX
NAME)

CC 22-10 (Physical Organic Chemistry)

IT 140848-82-4P
RL: PRP (Properties); FORM (Formation, nonpreparative); PREP (Preparation)
(formation and ESR of)

IT 126717-23-5P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation, x-ray anal., and cyclic voltammetry of)

L37 ANSWER 32 OF 35 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1992:425986 HCAPLUS Full-text
DOCUMENT NUMBER: 117:25986
ORIGINAL REFERENCE NO.: 117:4675a,4678a
TITLE: Starburst molecules for amorphous molecular materials: synthesis and morphology of 1,3,5-tris(diphenylamino)benzene and its methyl-substituted derivatives

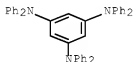
AUTHOR(S): Ishikawa, Wataru; Inada, Hiroshi; Nakano, Hideyuki; Shiota, Yasuhiko
CORPORATE SOURCE: Fac. Eng., Osaka Univ., Suita, 565, Japan
SOURCE: Molecular Crystals and Liquid Crystals Science and Technology, Section A: Molecular Crystals and Liquid Crystals (1992), 211, 431-8
CODEN: MCLCE9; ISSN: 1058-725X

DOCUMENT TYPE: Journal
LANGUAGE: English

AB Methyl-substituted derivs. of 1,3,5-tris(diphenylamino)benzene are found to constitute a novel class of amorphous mol. materials, as characterized by differential scanning calorimetry and x-ray diffraction. These comps. readily form stable amorphous glasses having glass-transition temps. of ca. 50° on cooling from the melt. The Me substituent exerts a great influence on the formation of the glassy state.

IT 126717-23-5P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and amorphous glassy state of)

RN 126717-23-5 HCAPLUS
CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX NAME)



CC 25-4 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
Section cross-reference(s): 37, 75, 76

IT 126717-23-5P 126717-25-7P 138143-23-4P 142143-88-2P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and amorphous glassy state of)

L37 ANSWER 33 OF 35 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1992:193607 HCAPLUS Full-text
DOCUMENT NUMBER: 116:193607
ORIGINAL REFERENCE NO.: 116:32789a,32792a
TITLE: Electron spin resonance of the quartet state of 1,3,5-tris(diphenylamino)benzene

AUTHOR(S): Yoshizawa, Kazunari; Chano, Akihisa; Ito, Akihiro; Tanaka, Kazuyoshi; Yamabe, Tokio;

CORPORATE SOURCE: Fujita, Hideo; Yamauchi, Jun
 SOURCE: Fac. Eng., Kyoto Univ., Kyoto, 606, Japan
 Chemistry Letters (1992), (3), 369-72
 CODEN: CMLTAG; ISSN: 0366-7022
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB The ESR of the quartet state of 1,3,5-tris(diphenylamino)benzene (TDAB) trication is reported. The orange-colored cation radical is prepared by oxidation of TDAB with trifluoroacetic anhydride in a tetrabutylammonium tetrafluoroborate-CH₂Cl₂ solution. The ESR spectrum reveals that the cation radical shows a typical quartet signal and that it is extremely stable at room temperature.

IT 140848-83-5P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (Preparation and ESR of)

RN 140848-83-5 HCAPLUS

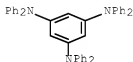
CN 1,3,5-Benzenetriamine, N,N,N',N',N'',N'''-hexaphenyl-, radical ion(3+), tris[tetrafluoroborate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 140848-82-4

CMF C42 H33 N3

CCI RIS



CM 2

CRN 14874-70-5

CMF B F4

CCI CCS

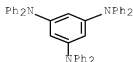


IT 126717-23-5P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);
 RACT (Reactant or reagent)
 (preparation and oxidation of, with trifluoroacetic anhydride in tetrabutylammonium tetrafluoroborate-methylene chloride)

RN 126717-23-5 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX NAME)



CC 22-10 (Physical Organic Chemistry)
Section cross-reference(s): 77
IT 140848-83-5P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and ESR of)
IT 126717-23-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);
RACT (Reactant or reagent)
(preparation and oxidation of, with trifluoroacetic anhydride in
tetrabutylammonium tetrafluoroborate-methylene chloride)

L37 ANSWER 34 OF 35 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1992:40989 HCAPLUS Full-text

DOCUMENT NUMBER: 116:40989

ORIGINAL REFERENCE NO.: 116:7017a,7020a

TITLE: Methyl-substituted derivatives of
1,3,5-tris(diphenylamino)benzene as a novel
class of amorphous molecular materials

AUTHOR(S): Ishikawa, Wataru; Inada, Hiroshi; Nakano,
Hideyuki; Shiota, Yasuhiko

CORPORATE SOURCE: Fac. Eng., Osaka Univ., Suita, 565, Japan

SOURCE: Chemistry Letters (1991), (10), 1731-4

CODEN: CMLTAG; ISSN: 0366-7022

DOCUMENT TYPE: Journal

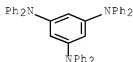
LANGUAGE: English

AB Methyl-substituted derivs. of 1,3,5-tris(diphenylamino)benzene (TDAB) show
unique solid-state morphol., as characterized by differential scanning
calorimetry and x-ray diffraction. These compds. readily form stable
amorphous glasses having glass-transition temps. of ca. 50°. p-Methyl-
substituted TDAB exhibits polymorphism.

IT 126717-23-5P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 126717-23-5 HCAPLUS

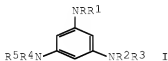
CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX
NAME)



CC 25-4 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
Section cross-reference(s): 37
IT 126717-23-5P 126717-25-7P 138143-23-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

L37 ANSWER 35 OF 35 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1990:188985 HCAPLUS Full-text
 DOCUMENT NUMBER: 112:188985
 ORIGINAL REFERENCE NO.: 112:31769a,31772a
 TITLE: Electrophotographic photoreceptors containing a
 triaminobenzene charge-transporting substance
 Ogata, Michiko; Watanuki, Tsuneo; Kamisaka,
 Tomosumi; Tsukamoto, Koji; Saruwatari, Norio
 INVENTOR(S): Fujitsu Ltd., Japan
 PATENT ASSIGNEE(S): Jpn. Kokai Tokkyo Koho, 7 pp.
 SOURCE: CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

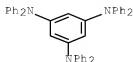
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 01219838	A	19890901	JP 1988-46501	198802 29
			<--	
PRIORITY APPLN. INFO.:			JP 1988-46501	198802 29
			<--	
OTHER SOURCE(S):	MARPAT 112:188985			
GI				



AB Electrophotog. photoreceptors have a photoconductive layer containing a triaminobenzene derivative I [R, R1-5 = lower alkyl, lower alkoxy, (substituted) aryl, aralkyl] as a charge-transporting substance on an elec. conductive support. The photoreceptors exhibit high sensitivity, low residual potential, and good cyclicability. Thus, an Al-deposited polyester film was coated with a composition containing AlCl₃ phthalocyanine and polyester resin and overcoated with a composition containing I (R = R1-5 = Ph) and polycarbonate resin to give a photoreceptor showing good sensitivity and cyclicability.

IT 126717-23-5
 RL: USES (Uses)
 (charge-transporting agent, for electrophotog. photoconductor,
 for repeated use)

RN 126717-23-5 HCAPLUS
 CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexaphenyl- (CA INDEX
 NAME)



IC ICM G03G005-06
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 IT 126717-23-5 126717-24-6 126717-25-7 126717-26-8
 126738-30-5
 RL: USES (Uses)
 (charge-transferring agent, for electrophotog. photoconductor, for repeated use)

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L38 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2008:249835 HCAPLUS [Full-text](#)
 DOCUMENT NUMBER: 148:273243
 TITLE: Passive matrix type display device
 INVENTOR(S): Hanaki, Takashi; Kishita, Hiroyuki; Kato, Tetsuya
 PATENT ASSIGNEE(S): Denso Corporation, Japan
 SOURCE: U.S. Pat. Appl. Publ., 28pp.
 CODEN: USXXCO
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20080048952	A1	20080228	US 2007-826847	20070719
JP 2008051977	A	20080306	JP 2006-227124	20060823
PRIORITY APPLN. INFO.:			JP 2006-227124	A 20060823

AB A passive matrix type display device includes: a display unit having a display area; 1st electrodes on the area for switching between a conductive state and a nonconductive state; 2nd electrodes on the area; a driving current source for supplying a driving current to the 2nd electrodes; light-emitting elements at an intersection between the 1st and 2nd electrodes; a 1st circuit for controlling a part of 1st electrodes to the conductive state and for scanning the 1st electrodes; a 2nd circuit for deciding a part of 2nd electrodes corresponding to a part of light-emitting elements emitting a light; light-emission adjustment elements coupled with the 2nd electrodes for branching an adjustment current from the driving current; and a light-emission adjustment controller for controlling the light from each light-emitting element by controlling the adjustment current.

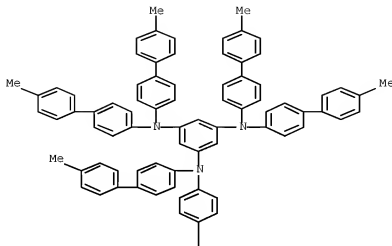
IT 863012-94-6
 RL: TEM (Technical or engineered material use); USES (Uses)

(hole transport layer; passive matrix type display device)

RN 863012-94-6 HCAPLUS

CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis(4'-methyl[1,1'-biphenyl]-4-yl)- (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



INCL -345

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 73

IT 185690-41-9 863012-94-6 933054-25-2

RL: TEM (Technical or engineered material use); USES (Uses)

(hole transport layer; passive matrix type display device)

L38 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2008:156802 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 148:225225

TITLE: Organic electroluminescent device

INVENTOR(S): Kobata, Tomokazu; Akashi, Nobutaka

PATENT ASSIGNEE(S): Bando Chemical Industries, Ltd., Japan

SOURCE: PCT Int. Appl., 28pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

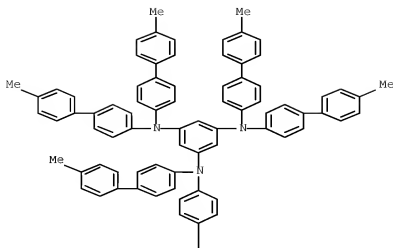
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2008015963	A1	20080207	WO 2007-JP64727	20070720
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
JP 2008041869	A	20080221	JP 2006-213068	20060804
PRIORITY APPLN. INFO.:			JP 2006-213068	A 20060804
OTHER SOURCE(S): MARPAT 148:225225				
AB	The invention relates to an organic electroluminescent device comprising a hole transport layer which contains a tri(p-terphenyl-4-yl)amine represented by a general formula (R1-C6H4-p-C6H4-p-C6H4) (R2-C6H4-p-C6H4-p-C6H4) (R3-C6H4-p-C6H4-p-C6H4)N as a hole transporting agent, where R1, R2 and R3 independently represents a hydrogen atom, an alkyl group, a cycloalkyl group which may have a substituent, or an aryl group which may have a substituent; and a hole injection layer which contains a hole injecting agent comprising an aromatic tertiary amine having an ionization potential ranging from 5.2 to 5.6 eV. The organic electroluminescent device can operate at a low operation voltage, with high efficiency and at a high luminance.			
IT	863012-94-6			
RL:	TEM (Technical or engineered material use); USES (Uses) (organic electroluminescent device)			
RN	863012-94-6 HCAPLUS			
CN	1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis(4'-methyl[1,1'-biphenyl]-4-yl)- (CA INDEX NAME)			

PAGE 1-A



PAGE 2-A



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 25

IT 2085-33-8, Alq3 7429-90-5, Aluminum, uses 7789-24-4, Lithium fluoride, uses 50926-11-9, ITO 123847-85-8 145693-79-4 147951-36-8 147951-38-0 164724-35-0 185690-41-9 852641-11-3 863012-94-6 933054-25-2

RL: TEM (Technical or engineered material use); USES (Uses) (organic electroluminescent device)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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